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ADJUSTABLE SIGN/TARGET HOLDER

PRIORITY INFORMATION

This application hereby claims the benefit under Title 35, United States Codes § 119(e) of any United States application serial no. 60/420,509 filed on October 23, 2002, and is hereby incorporated by reference.

BACKGROUND OF THE INVENTION

1. Field of the invention.

The present invention relates generally to adjustable sign/target holders, and more specifically it relates to a ground-mountable adjustable sign/target holder for a convenient, secure, temporary, above-ground display of a lightweight, flexible sign panel; lightweight, rigid sign panels; or two-dimensional targets of various sizes using a durable and portable collapsible frame which can be installed and removed without the use of additional tools.

2. Description of the related art.

It can be appreciated that adjustable sign/target holders have been in use for years. Typically, adjustable sign/target holders are comprised of signs and sign-mounting apparatus designed primarily for application in the real estate industry, portable sign installation kits, sign and anchor apparatuses foldable signs, quick set-up sign stands, convertible highway message signs, ground-mounted sign holders, sign stands with

rolling bases, portable ornamental signs, one-piece display signs, resilient rod frame sign holders in various configurations, height-adjustable sign holders, and disposable wire frame mount core-flute signs.

The main problem with conventional adjustable sign/target holders are their lack of versatility in failing to accommodate a variety of sign panel sizes, especially among those designs incorporating durable wind- and weather-resistant sign-mounting posts and mounting brackets such as those typically employed in real-estate advertising signs; as well as a lack of versatility in failing to accommodate a variety of sign or target panel sizes among those products marketed primarily for their relatively low cost. Another problem with conventional adjustable sign/target holders is a lack of durability in less expensive sign and target mounting apparatuses such as those employed for the display of temporary flexible-signs. Another problem with conventional adjustable sign/target holders is the additional expense and inconvenience typically incurred in attempting to adapt sign mounting frames and brackets to a variety of temporary sign or target panel sizes whenever a change of sign or target panel sizes is desired.

While these devices may be suitable for the particular purpose to which they address, they are not as suitable for a convenient, secure, temporary, above-ground display of lightweight, flexible sign panels; lightweight, rigid sign panel; and/or two-dimensional targets of various sizes using a durable

and portable collapsible frame which can be installed and removed without the use of additional tools.

SUMMARY OF THE INVENTION

In these respects, the ground-mountable adjustable sign/target holder according to the present invention substantially departs from the conventional concepts and designs of the prior art and, in so doing, provides an apparatus primarily developed for the purpose of a convenient, secure, temporary, above-ground display of lightweight flexible sign panels; lightweight, rigid sign panels; and/or two-dimensional targets of various sizes using a durable and portable collapsible frame and which can be installed and removed without the use of additional tools.

The present invention generally relates to a sign/target holder comprising a base frame configured for substantial positioning thereof relative to a base surface; an adjustable sign/target receiver, the sign/target receiver being mounted upon the base frame, the sign/target receiver having a primary receiver plane associated therewith, the sign/target receiver including a first L-shaped member mounted relative to the base frame, the first L-shaped member being positioned in the primary receiver plane, the first L-shaped member having a first leg and a second leg, the first leg being at a substantially right angle relative to the second leg, the first leg of the first L-shaped

member being mounted relative to the base frame, the second leg of the first L-shaped member extending away from the base frame, the second leg of the first L-shaped member being provided with at least one releasable attachment mechanism configured for facilitating a releasable attachment of a sign/target thereto; and a second L-shaped member mounted relative to the base frame and the first L-shaped member, the first L-shaped member being selectively positionable relative to the second L-shaped member, the second L-shaped member being positioned in a primary receiver plane, the second L-shaped member having a first leg and a second leg, the first leg and the second leg thereof being at a substantially right angle relative to one another, the first leg of the second L-shaped member being mounted relative to the base frame, the second leg of the second L-shaped member extending away from the base frame, the second leg of the second L-shaped member being provided with at least one releasable attachment mechanism configured for facilitating a releasable attachment of a sign/target thereto.

An advantage of the present invention is that it provides a ground-mountable, adjustable sign/target holder for a convenient, secure, temporary, above-ground display of lightweight, flexible sign panels; lightweight, rigid signs; and/or two-dimensional targets of various sizes using a durable and portable collapsible frame which can be installed and removed without the use of additional tools.

Another advantage of the ground-mountable, adjustable sign/target holder is that it is capable of mounting flexible or rigid temporary sign panels or two-dimensional targets in a range of sizes for use in various outdoor sign or target display applications.

Another advantage of the invention is that it will facilitate the changing of flexible or rigid sign panels or two-dimensional targets in a manner that is more convenient and more cost-effective than those devices currently in use for similar purposes.

Another advantage of the invention is that it can be easily installed without the use of ancillary tools for either the frame installation or the sign/target panel attachment to the frame.

Another advantage of the invention is that it will accommodate various types and sizes of two-dimensional sign panels or target materials.

Another advantage of the invention is of a design and employs the requisite materials to withstand a variety of adverse conditions including wind velocities of up to 60 mph without collapsing or dislodging the sign or target panels mounted thereon.

Other objects and advantages of the present invention will become obvious to the reader and it is intended that these objects and advantages are within the scope of the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

The above-mentioned and other features and advantages of this invention, and the manner of attaining them, will become more apparent and the invention will be better understood by reference to the following description of multiple embodiments of the invention taken in conjunction with the accompanying drawings, wherein:

Fig. 1 is a perspective view of the present invention depicting attachment of a small sign or target panel.

Fig. 2 is a perspective view of the present invention depicting attachment of a large sign or target panel.

Fig. 3 is a perspective view of the present invention identifying its components;

Fig. 4 is a front profile view of the present invention showing typical installation and ground insertion; and

Fig. 5 is a perspective view of a second embodiment of the sign/target holder of the present invention, featuring a surface-mount capability.

Corresponding reference characters indicate corresponding parts throughout the several views. The exemplifications set out herein illustrate at least one preferred embodiment of the invention, in one form, and such exemplifications are not to be construed as limiting the scope of the invention in any manner.

DETAILED DESCRIPTION OF THE INVENTION

Turning now descriptively to the drawings, in which similar reference characters denote similar elements throughout the several view, Figs. 1-4 illustrate a ground-mountable adjustable

sign/target holder, which includes the base frame 40, which includes base cross brace 42; attached to which are two vertical frame member holders 22a, 22b; vertical frame member holder fasteners 24; vertical "L" frame members 20a, 20b; and sign or target panel attachment clamping devices 26.

The base frame 40, is an inverted U-Shaped piece of resilient rod or similar material to which is joined the base cross brace 42 and which is partially inserted into the ground. The left vertical frame member holder 22a is a hollowed portion of a metal rod or similar material which, in addition to its hollowed, lengthwise interior aperture, also contains another aperture running perpendicularly therethrough, the whole of which is joined horizontally onto the base frame 40 on its left external corner. Likewise, the right vertical frame member holder 22b is a hollowed portion of a metal rod or similar material which, in addition to its hollowed, lengthwise interior aperture, also contains another aperture running perpendicularly therethrough, the whole of which is joined horizontally onto the base frame 40 on its right external corner.

The left vertical "L" frame member 20a is an "L"-shaped piece which attaches to the left side of the base frame 40 through the horizontal interior aperture of the left vertical "L" frame member holder 22a and which is retained in position by the vertical frame member fastener 24. The right vertical "L" frame member 20b is an "L"-shaped piece which attaches to the right side of the base frame 40 through the interior aperture of the

right vertical "L" frame member holder 22b and which is retained in position by the vertical frame member fastener 24.

The vertical frame member fastener 24 consists of a gnarled or winged nut or similar device with a threaded rod extrusion for insertion into the vertical frame member holders 22a and 22b through which are retained the left and right vertical "L" frame members 20a and 20b. The sign or target panel attachment clamping device 26 is a springed clip or similar device which can be compressed by hand for attachment of the edges of the sign or target panel to the vertical "L" frame members.

The base frame 40 is an inverted U-shaped piece of resilient rod or similar material to which is joined the base cross brace 42 and which is partially inserted into the ground. Referring to Figs. 1-4, and as best seen from Fig. 3, the primary purpose of the base frame component 40 is twofold: namely, (a) to provide integral stationary parallel elongated vertical members which may driven into the ground thereby providing a rigid structure for the further erection of the additional sign frame components and sign panels mounted thereto above the ground; and (b) to facilitate secure ground insertion of the temporary sign panel holder by providing an integral stationary horizontal cross-brace 42 of sufficient strength and rigidity to act as a step platform for driving the base frame into the ground surface without the aid of any tools. One familiar in the art can also appreciate the additional rigidity that the stationary horizontal cross-

brace 42 provides to the base frame by connecting both legs of the base frame to one another.

Considering the preferred embodiment of the current invention, it is to be understood that, among various possible modifications of the components, materials of construction may be substituted for the resilient rod herein described such as wood, fiberglass, or rigid polymers. Moreover, it may be desirable to employ such materials that are not cylindrical but of some other geometry (e.g., rectangular, octagonal) in cross-section for either this specific component or throughout the structure serving as a rigid frame for the attachment of sign panels. Indeed, one possible modification of the preferred embodiment herein described, for example, may be to utilize a piece of angled-stock rigid material in the place of other materials for the stationary horizontal cross-member 42 alone. The preferred embodiment of the current invention, however, utilizes frame material that is cross-sectionally round throughout the frame design, in part, to economize manufacture.

Each holder also provides a separate perpendicular aperture for insertion of one of the hand-activated fasteners 24 which secure either the left or right vertical "L" frame members 20a onto the base frame. While the sign/target holder depicted in the figures utilizes a diametrically-drilled, internally-threaded aperture for insertion of the hand-activated fasteners to secure the vertical frame, it is to be understood that alternative designs identical in function may be employed for this specific

component, e.g., a hand-compressed retaining spring may be attached to the vertical frame member in such a manner as to control the expansion of the vertical frame necessary to accommodate the installation of sign or target panels of various sizes without the need for additional tools.

The left vertical "L" frame member 20a attaches to the left side of the base frame 40 through the horizontal interior aperture of the left vertical "L" frame member holder 22a and is retained in position by the vertical frame member fastener 24. The left vertical "L" frame member 20a is a 90-degree angled section having an elbow 23a. The bottom of horizontal portion 21a serves as a laterally expandable base passing through the base frame holder 22a from which extends the vertical arm to which are attached the sign or target attachment clamping devices 26 used to fasten one side of the sign or target panel 60 being displayed. As noted in the foregoing description of the base frame 40, the preferred embodiment of the current invention utilizes round stock material in its frame design. Notwithstanding the previously noted advantage of manufacturing economy obtainable by limiting frame material selection throughout the design to one of uniform cross section and size, it can be readily seen that one need not be confined to the use of such uniform materials or geometries.

The right vertical "L" frame member 20b attaches to the right side of the base frame 40 through the interior aperture of the right vertical "L" frame member holder 22b and is retained in

position by the vertical frame member fastener 24. Considering both vertical "L" frame members now in greater detail, each of the members 20a and 20b are substantially identical to one another except in location of attachment (left or right of center) through its respective vertical member collar (left or right) and orientation of insertion through the same so only the aforementioned left frame member will be further described. Hence, possible structural and functional alternatives hitherto alluded to for that component in this instance and in all further instances hereafter pertain to both members 20a and 20b.

The vertical frame member fastener 24 includes of a gnarled or winged nut or similar device with a threaded rod member for insertion into the vertical frame member holders 22a and 22b through which are retained the left and right vertical "L" frame members 20a and 20b. As can be readily observed from the figure depicting location of insertion of this component (Fig.3), it is also possible to substitute similar commercially available stock items with external threaded extrusions complementing an internally threaded aperture of each vertical frame member holder 22a and 22b, although some of these stock items may provide varying degrees of ease-of-use in comparison with the device depicted in the accompanying figures.

The sign or target panel attachment clamping device 26 is a spring clip or similar device which can be compressed by hand for attachment of the edges of the sign or target panel to the vertical "L" frame members. The sign or target panel attachment

clamping device 26 advantageously is a commercially-available, hand-activated spring compression device which may be readily relocated along the vertical axis of the vertical frame member 20a and 20b and which secures one section of edge of the sign or target panel 59, 60 to its corresponding vertical frame member. While it may be possible or, in some instances, even preferable to utilize clamps of the type requiring additional tools for the application of greater tightening pressures of the clamp surfaces upon the sign panel (for example, in use of the current invention under conditions of extreme wind velocity or where vandalism or theft of the sign panel is a concern), the particular hand-activated spring attachment clamping device 26 depicted in the accompanying figures may be most advantageous both in terms of convenience and economy.

As previously identified in the foregoing descriptions, the base frame 40, as a piece of continuous resilient rod bent into inverted "U"-Shaped configuration, has joined to it at a perpendicular angle relative to both vertical legs of the "U" and, at an appropriate distance from the end of both legs of the base frame, a length of similar material (i.e., base frame horizontal cross-brace 42) which straddles both legs of the base frame horizontally and is made of a material of sufficient strength and rigidity to act as a step platform for driving the base frame into the ground surface without the aid of any tools. Atop the edge of each external corner of the inverted "U" shaped base frame and parallel to the horizontal axis of the same top

edge is attached one of each vertical frame member holder 22a and 22b with its internal aperture in perpendicular orientation to the horizontal axis of the top edge of the "U" shaped base frame member.

The left and right vertical "L" frame members 20a and 20b are connected to the base frame member by insertion through the non-threaded horizontal internal aperture of each vertical frame member holder 22a and 22b in order that one arm of each vertical "L" frame member 20a and 20b should extend vertically above the top edge of the base frame 40 and that the horizontal leg of each should mirror the other (i.e., elbows 23 being directed away from one another) in relation to its vertical axis. However, other alignments of "L" frame members 20a and 20b (e.g., similarly aligned elbows 23 or elbows 23 directed toward each other) are considered within the purview of the invention.

Inserted into the perpendicular aperture of each vertical frame member holder 22a and 22b is a hand-activated vertical frame member fastener 24 securing each vertical "L" frame member 20a and 20b to the base frame 40.

Sign or target panel attachment clamping devices 26 are fastened to the vertical arm of each vertical "L" frame member by hand compression and in sufficient number and optimal vertical spacing to accommodate the size and thickness of the sign or target panel being displayed. In addition to alternative material compositions and cross-sections previously herein referenced or described for the base frame 40 (including its

integral horizontal cross-brace 42), it is possible to substitute a base frame of molded single piece construction incorporating the horizontal cross member feature.

Furthermore, it is contemplated that a variation to the design of the current invention may include the addition of external horizontal step-tabs or platforms located at various points on the base frame in order to facilitate the insertion of the vertical legs of the base frame into the ground. Still another variation of the current invention may incorporate the use of spades similar to those in use on chain-link or barbed wire-fence posts along the vertical legs of the base frame or at the end of each in order to increase stability. All such variations to the base frame, however, refine upon the basic concepts of the current invention insofar as the features of easy ground insertion and structural stability are concerned and do not detract from the intrinsic advantages accompanying these features of the current invention which may be more economical to produce without these suggested refinements.

Similarly, a possible alternative to the vertical "L" frame member holders 22a and 22b and fasteners 24 would be an internally-sprang barrel, or two independently adjustable and internally-sprang barrels sliding upon a horizontal shaft, the hand-activated compression of which would serve to free each vertical "L" frame member in order to adjust the interval between each vertical arm of the same relative to the size of the sign panel being displayed. Addition of this enhancement to the

design of the current invention may also increase its cost and require structural reinforcement of the base frame to accommodate increased weight. Even so, this enhancement may prove viable and worthwhile in certain applications.

Finally, it is readily apparent that those components which are commercially available which are utilized in this design, namely the vertical "L" frame holders 24 and the sign or target panel attachment clamping devices 26 can be commercially obtained in a multiplicity of designs in order to accomplish their intended purposes in the current invention, and hence such alternatives to those components described in the current design are not discussed further.

Referring to Fig. 4, showing a typical installation of the adjustable sign/target holder, the base frame 40 is inserted into the ground to a depth determined by the user to provide sufficient stability to the fully assembled sign/target holder, using hand or foot pressure applied to the horizontal cross-brace 42. Upon successful ground insertion to the required depth, each vertical "L" frame member 20a and 20b in turn is inserted through the horizontal aperture of the vertical "L" frame member holder whereupon the user may partially tighten each fastener 24 in tandem sequence upon the surface of the base of each vertical "L" frame so as to adjust each arm of each vertical "L" frame member at the location necessary to approximate the span required to accommodate the panel being mounted. Depressing each attachment clamping device 26, inserting a portion of the edge of the panel

being displayed between the clamping surfaces, and thereafter releasing each clamping device in turn thereby secures the panel 59, 60, 61, 62 between each clamping surface.

The user may then proceed to partially loosen the fastener securing either one of the vertical "L" frame members 20a or 20b in order to further fine-adjust the span between the arm of each vertical "L" frame member and thereby fine-adjust the degree of tension created between the two vertical arms. Upon completion of the fine-adjustment process, each fastener 24 may be fully tightened, thereby securing the assembly to its needed display size. At this point, installation of the sign/target holder is complete.

Upon completion of use, a reverse order of erection may be employed to disassemble the sign/target holder and to remove it from the ground. Additionally, in order to facilitate transport of the disassembled unit, each vertical "L" frame member may be rotated so as to collapse it upon the legs of the base frame 40 and hence reduce space occupied by the disassembled unit and to reduce the likelihood of damage to external objects by the protrudence of either vertical "L" frame arms or base frame legs. The clamping devices 26 and fasteners 24 may also remain attached to the frame in order to facilitate, transport, and provide convenient storage of the unit with all its components for future use.

An alternative mounting arrangement is shown in the embodiment of Fig. 5. Specifically, stand elements 50 are

attached to base 40 that permit ground-level/surface mounting of the sign/target holder.

While this invention has been described as having a preferred design, the present invention can be further modified within the spirit and scope of this disclosure. This application is therefore intended to cover any variations, uses, or adaptations of the invention using its general principles. Further, this application is intended to cover such departures from the present disclosure as come within known or customary practice in the art to which this invention pertains and which fall within the limits of the appended claims.